

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A pre-formed insulation module for insulating a process component having opposed longitudinally extending contacting surfaces extending along a length thereof and terminal contacting surfaces at each end thereof comprising:

- (a) at least one first inner insulation layer being constituted of an insulation material having suitable thermal shock characteristic under cryogenic conditions and having one surface proximate to a surface of a component to be insulated,
- (b) at least one second outer insulation layer disposed radially outwardly of said inner insulation layer;
- (c) at least one water vapour barrier layer; and
- (d) a cladding layer,

wherein said longitudinally extending contacting surfaces include a portion formed by a portion of at least one of said first inner insulation layer and said second outer insulation layer.

2. The module of claim 1 including connection means for connecting said module to a further adjacent such module for insulating said component.

3. The module of claim 2 wherein said connection means are circumferentially and longitudinally disposed relative to a longitudinal axis of said module.

4. The module of claim 3 wherein said ~~circumferentially disposed connection~~ means are formed in the terminal contacting surfaces and the longitudinally disposed connection means are formed in said longitudinally extending surfaces.

5. The module of claim 3 or 4 wherein said ~~connection means are tongue and groove joints, complementary joints~~ being formed at each end of the module.

6. The module of any one of the preceding claim wherein said inner and outer insulation layers are formed from insulation materials having different thermal shock characteristic.

7. The module of claim 6 wherein said at least one insulation layer is formed of polyimide foam, the at least one outer layer is formed of polyisocyanurate resin and the water vapour barrier layer, radially outwardly disposed from said second outer insulation layer, is formed from a material selected from the group consisting of metallic foils, polymeric films, mastics and fibre reinforced such materials.

8. The module of any one of the preceding claims having, formed along the length of the module, at least one contraction/expansion joint.

9. The module of claim 8 wherein said contraction/expansion joint is a recess having a terminal end formed in said at least one second outer insulation layer.

10. The module of any one of the preceding claims wherein a contraction/expansion joint is formed in terminal contacting surfaces of the module at each end thereof.

11. A method of manufacturing the insulation module as claimed in any one of claims 1 to 10.

12. A method of insulating a process component comprising manufacturing insulation modules as claimed in any one of claims 1 to 10; securing the modules to a component, or part of a component, and other modules insulating the component to enable insulation of that component or part of the component.

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13. An insulation system for insulating a process component comprised of pre-formed modules as claimed in any one of claims 1 to 10, adjacent modules being connected together by connection means to form the insulation system insulating the component.

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